What is claimed is:

1. A working end of a surgical probe for delivering energy to tissue, comprising:

a member defining an engagement plane for engaging tissue and delivering energy to tissue;

a medial portion comprising a material that is variably resistive, said medial portion extending inwardly from said engagement plane; and

an interior conductive portion at an interior of the member coupled to said medial conductive portion.

2. The working end of Claim 1 further comprising an electrical source operatively coupled to said interior conductive portion.

3. The working end of Claim 1 wherein said engagement surface is an exterior of said medial portion.

4. The working end of Claim 1 wherein the medial portion has an electrical resistance that increases with an increase in temperature thereof.

5. The working end of Claim 1 wherein the medial portion has an electrical resistance that decreases with an increase in temperature thereof.

6. The working end of Claim 5 wherein the medial portion defines a switching range at which its electrical resistance substantially increases or decreases in a selected temperature range.

7. The working end of Claim 6 wherein said switching range falls between about 40° C. and 200° C.

8. The working end of Claim 1 wherein the medial portion is a ceramic material.

9. The working end of Claim 1 wherein the conductive portion is a flexible material.

10. The working end of Claim 1 wherein the medial portion is of a compressible material.

11. The working end of Claim 10 wherein the medial portion comprises a silicone polymer doped with a conductive composition.

12. The working end of Claim 10 wherein the medial portion varies in resistance in response to pressure applied thereto.

13. The working end of Claim 1 wherein the engagement plane carries a thin-film metallic coating.

14. The working end of Claim 1 wherein said engagement plane extends 360° about the surface of the member.

15. The working end of Claim 1 wherein said engagement plane extends about only a portion of the member.

16. A method for controlled application of energy to a targeted tissue, comprising the steps of:

providing a probe with a working end having a surface engagement portion, a variably resistive portion, and at least one conductive portion coupled to a voltage source;

positioning said surface engagement portion in contact with the targeted tissue; and

delivering Rf energy to said at least one conductive portion wherein energy application to said tissue is modulated by changes in resistance of said variably resistive portion.

17. The method of Claim 16 wherein the variably resistive portion defines a switching range in which its resistivity is altered substantially at a selected temperature, and the delivering step comprises the step of reducing or eliminating Rf heating of tissue in any time interval that said variably resistive portion is at or above said switching range.

18. The method of Claim 16 further comprising the step of applying energy to the targeted tissue by means of conduction of heat through the engagement surface portion from said variably resistive and conductive portions.

19. The method of Claim 16 wherein the variably resistive portion defines a switching range in which its resistivity is altered substantially at a selected temperature, and the delivering step comprises the step of increasing Rf heating of tissue in any time interval that said variably resistive portion is at or above said switching range.

20. The method of Claim 16 wherein the variably resistive portion defines a switching range in which its resistivity is altered substantially at a selected pressure thereto, and the delivering step comprises the step of increasing Rf heating of tissue in any time interval that said variably resistive portion is at or above said switching range.

21. A surgical probe for delivering energy to tissue, comprising:

an elongated probe having a working end that defines an engagement plane for contacting tissue;

a layer portion inward of said engagement plane comprising a material having a thermally sensitive resistance to electrical current flow therethrough;

at least one electrode carried in said working end operatively connected to a voltage source.

22. The working end of Claim 21 wherein said layer portion in exposed in said engagement plane.

22. The working end of Claim 21 wherein said engagement plane carries an electrode.

23. The working end of Claim 21 wherein first and second polarity electrodes in the working end are spaced apart by an intermediate portion having a thermally sensitive resistance.

24. The working end of surgical probe of Claim 21 wherein said material having a thermally sensitive resistance is selected from the class of materials consisting of positive temperature coefficient materials and negative temperature coefficient materials.

25. The working end of Claim 21 wherein said material having a thermally sensitive resistance is a conductively doped foam.

26. The working end of Claim 22 wherein said material having a thermally sensitive resistance is a conductively doped silicone.

27. The working end of Claim 26 wherein said conductively doped silicone has an open cell structure.

28. The working end of Claim 21 wherein said material having a thermally sensitive resistance is a conductively doped zirconium oxide.

29. The working end of Claim 21 wherein layer portion defines a gradient of thermally sensitive resistance across a selected dimension thereof.

30. The surgical probe of Claim 21 wherein the working end has a linear configuration.

31. The surgical probe of Claim 21 wherein the working end defines at least one radius of curvature.

32. The surgical probe of Claim 21 wherein the working end has a helical configuration.

33. The surgical probe of Claim 21 further comprising an independent cutting electrode at a distal tip of the working end.

34. The working end of Claim 27 further comprising a fluid source coupled to said open cell compressible material for delivering fluid thereto.

35. A surgical probe for delivering energy to tissue, comprising:

an elongated probe body having a working end that defines an engagement plane for contacting tissue;

an outer body portion extending inward of said engagement plane that comprises a material having a resistance to electrical flow therethrough that varies substantially with pressure applied thereto; and

a conductive portion carried at an interior of the probe that is operatively connected to a voltage source.

36. The working end of Claim 35 further comprising a medial body portion of a material having a resistance to electrical flow therethrough that varies substantially with temperature, said medial body portion extending inward of said outer body portion.

37. The working end of Claim 35 wherein said outer body portion has a resistance to electrical flow therethrough that decreases with pressure applied thereto.

38. The working end of Claim 35 wherein said outer body portion has a resistance to electrical flow therethrough that increases with pressure applied thereto.

39. The working end of Claim 35 wherein said outer body portion is an open cell sponge-type material.

40. The working end of Claim 39 further comprising a fluid source coupled to said an open cell sponge-type material for providing fluid flow thereto.

41. The working end of Claim 35 wherein said outer body portion is a closed cell sponge-type material.

42. The working end of Claim 35 further comprising an exterior conductive layer carries about an exterior portion of said working end.

43. A surgical probe for delivering energy to tissue, comprising:

a probe body having a working end that defines an engagement plane for contacting tissue;

a first body portion inward of said engagement plane comprising a material having a resistance that substantially varies with temperature;

a second body portion comprising material that has a selected substantial resistive; and

at least one conductive body portion operatively connected to a voltage source.

44. The working end of Claim 43 wherein said second body portion and said at least one conductive body portion are operatively connected in series to a voltage source

45. A surgical probe for delivering energy to tissue, comprising:

an elongated probe having a working end that defines an engagement plane for contacting tissue;

a body portion inward of said engagement plane comprising a material that is variably resistive to electrical current flow therethrough;

means for varying the resistance of said body portion; and

at least one electrode carried in said working end operatively connected to a voltage source.

46. The working end of Claim 45 wherein said means for varying the resistance of said body portion is selected from the class consisting of direct current energy application means and photonic energy application means.

Add A2